

Abstract

Disclosed are RNA polymerases consisting of a wild type RNA polymerase provided that at least one of amino acids in the wild type RNA polymerase has been modified to enhance its ability for incorporating 3'-deoxyribonucleotides and derivatives thereof in comparison with the corresponding wild type RNA polymerases. Specifically, disclosed are, for example, the RNA polymerases wherein at least one amino acid present in a nucleotide binding sites of the wild type RNA polymerases such as phenylalanine has been replaced with tyrosine. The RNA polymerases of the present invention are a RNA polymerase which exhibits little or no bias for incorporation between ribonucleotides and 3'-deoxyribonucleotide as well as among ribonucleotides having different base groups and among deoxyribonucleotides having different base groups.